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PCT App. No.: PCT/FI2003/000811

Claim Listing

1-10. (cancelled)

11. (new) A paper machine incorporating on line finishing, and defining an upstream direction and a downstream direction wherein a paper web formed on the paper machine is arranged to travel in the downstream direction, comprising:

at least one finishing stage arranged within the paper machine for finishing a paper web produced on the paper machine, the at least one finishing stage having a downstream end;

cutting equipment positioned upstream of the finishing stage, the cutting equipment arranged to form a tail from a full width paper web;

tail threading equipment extending from the cutting equipment through the at least one finishing stage, and

a single-contact draw point formed between one cylinder and a wire arranged in contact with the one cylinder, the single-contact draw point arranged at the downstream end of the finishing stage; and

wherein the tail threading equipment includes a carrier rope system passing through the single-contact draw point.

12. (new) The paper machine of claim 11, wherein the at least one finishing stage has equipment changing selected properties of the paper a selected amount, positioned upstream of the single-contact draw point and further comprises:

measuring elements forming part of the finishing stage positioned upstream of the single-contact draw point and downstream of the equipment changing the properties of the paper a selected amount, the measuring elements arranged for measuring the selected properties of the paper.

13. (new) The paper machine of claim 11 wherein the cutting equipment is composed of water cutters that are positioned over an open draw in the paper machine.

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14. (new) The paper machine of claim 11, wherein a wrap angle of 100° – 160° is defined by the wire on the periphery of the cylinder.

15. (new) The paper machine of claim 11, wherein in addition to the carrier rope system the tail threading equipment includes at least one vacuum belt.

16. (new) The paper machine of claim 11, wherein the cylinder is a dryer cylinder.

17. (new) The paper machine of claim 11, wherein the wire is a dryer wire.

18. (new) The paper machine of claim 11, wherein the wire is supported and driven by a lead roll connected to a drive.

19. (new) The paper machine of claim 18, wherein, in addition to the lead roll, the wire forming an endless loop is supported with three additional rolls.

20. (new) The paper machine of claim 18, wherein the cylinder has an auxiliary drive, which is arranged to follow the drive of the lead roll.

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21. (new) A paper machine having a dryer section and incorporating on line finishing, the paper machine defining an upstream direction and a downstream direction, wherein a paper web formed on the paper machine is arranged to travel in the downstream direction, comprising:

- at least one finishing stage forming part of the paper machine downstream of the dryer section for finishing the paper web produced on the paper machine, the at least one finishing stage having a downstream end;
- cutting equipment positioned upstream of the finishing stage, the cutting equipment arranged to form a tail from a full width paper web;
- a single-contact draw point formed between one cylinder and a wire arranged in contact with the one cylinder, the single-contact draw point arranged at the downstream end of the finishing stage; and
- tail threading equipment extending from the cutting equipment to a carrier rope system passing through the single-contact draw point.

22. (new) The paper machine of claim 21, wherein the at least one finishing stage has equipment for changing selected properties of the paper a selected amount, the equipment positioned upstream of the single-contact draw point, the paper machine further comprising:

- measuring elements forming part of the finishing stage positioned upstream of the single-contact draw point and downstream of the equipment changing the properties of the paper a selected amount, the measuring elements arranged for measuring the selected properties of the paper;
- a controller in data receiving relation to the measuring elements, and in controlling relation to the equipment changing the selected properties of the paper a selected amount; and

wherein the the first finishing stage is arranged so that the the equipment changing the properties of the paper a selected amount can be adjusted to selected production settings while running a full width web.

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23. (new) The paper machine of claim 21 wherein the cutting equipment is composed of water cutters that are positioned over an open draw in the paper machine.

24. (new) The paper machine of claim 21, wherein a wrap angle of 100° – 160° is defined by the wire on the periphery of the cylinder.

25. (new) The paper machine of claim 21, wherein in addition to the carrier rope system the tail threading equipment includes at least one vacuum belt.

26. (new) The paper machine of claim 21, wherein the cylinder is a dryer cylinder.

27. (new) The paper machine of claim 21, wherein the wire is a dryer wire.

28. (new) The paper machine of claim 21, wherein the wire is supported and driven by a lead roll connected to a drive.

29. (new) The paper machine of claim 28, wherein, in addition to the lead roll, the wire forming an endless loop is supported with three additional rolls.

30. (new) The paper machine of claim 28, wherein the cylinder has an auxiliary drive, which is arranged to follow the drive of the lead roll.